A.3 CHEMICAL RESISTANCE OF MATERIALS

TABLE A.3

Chemical Resistance of Materials

	METALS																												CARBONS & CERAMICS									RUBBERS					THERMOPLASTICS															THERMOSETTING PLASTICS																				WOODS				
MATERIALS × — Very Good Service + — Moderate Service – — Limited or Variable Service o — Unsatisfactory Blank — No Information CHEMICALS Solids Assumed in Solution Room Temperatures Assumed Unless Otherwise Stated	Carbon Steel; Fe	Cast Iron & Ductile Iron; Fe	304 Stainless Steel; Fe, 18Cr, 8Ni	316 Stainless Steel; Fe 16Cr, 10Ni, 2Mo	347 Stainless Steel; Fe, 17Cr, 9Ni; (Cx10)Cb	Ni-Resist Iron; Fe 14Ni, 2Cr, 2Si	Durimet 20; Carpenter 20; Fe; 4Cu, 20Cr, 29Ni, 2Mo. 1Si	Worthite; 3Mo, 2Cu, Fe, 20Cr, 24Ni, 3Si	Durorpm; Fe, 14Si; Durichlor, Fe, 14Si, 3Mo*	Copper; Brass; Bronzes; Everdur	Aluminum; Al (and Alloys)	Lead; Pb	Monel; 67Ni, 30Cu, 1.4Fe	Nickel; Ni	Inconel; 76Ni, 15Cr, 8Fe	Hastelloy B; Ni, 26Mo, 4Fe	Hastelloy C; Ni, 16Mo, 4Fe, 14Cr, 4W	Hastelloy D; Ni, 8Si, 3Cu	Chlorimet 3; 3Fe, 1Si, 60Ni, 18Mo, 18Cr	Chlorimet 2; 63Ni, 32Mo, 3Fe, 1Si	Stellite; Co, 28Cr, 4W	Zirconium; Z	Tantalum; Ta	Silver; Ag	Platinum; Pt	Dowmetal; (Mg alloys)	Titanium; Ti	Molybdenum; Mo	Carbon & Graphite	Glass, "Pyrex" brand	Silicaware	Silicate Cements	Chemical Stoneware	Transite (asbestos & cement)	Chemical Porcelain	Concrete—Unbonded	Concrete—Motor Bonded	Hard Rubber (Natural)	Soft Rubber (Natural)	Neoprene	Butadiene Derivatives	Nitrile Rubber (Chemigum)	Viton	Asphaltic, Bitumastic	Cellulose Acetate	Cellulose Acetatebutyrate	Ethyl Cellulose (Ethocel)	Cellulose Nitrate	Acrylic (Lucite, Plexiglas)	Coumarone Resins	Polyethylene	Polyvinyl Chloride, Rigid or Unplasticized	Tygon (PVC & Copolymers)	Saran (Vinyl Chloride, Vinyldene Chloride)	Kel-F (Polytrifluorochloroethylene)	Teflon (Polytetrafluoroethylene)	Uscolite CP (Styrene–Acrylonitrile–Butadiene)	Penton (Chlorinated Polyether)	Shellac Compounds	Organic Polysulfides	Polystyrene (Styron)	Vinylidene Chlorides	Vinyl Chloride Acetates	Cast Phenol Formaldehyde	Haveg 41 (Phenolic w. Asbestos)	Heresite (Phenol Formaldehyde)	Molded Phenolformald (Durez)	Phenol Furfural Plastics	Urea Formaldehyde	Casein Plastics	Epoxy Resins	Furane Resins (Haveg 61, Duralon)	Silicone Resins	Permanite (Furan, Glass Fiber)	Nylon (Adipic Acid–Hexameth, Diamine)	Durcon 6 (Modified Epoxy)	Cypress	Fir	Maple	Oak	Pine	Redwood
Acetic Acid, 100% CH_3COOH	o	–	+	×	–	o	×	×	×	o	×	o	–	+	–	×	×	×	×	×	×	×	×	×	×		×		×	×	×	×	×		×			×	–	o	o	o	o	o	o		×	o	o		o	o	o	–	×	×	o	+		×	o	o	o	–	–	×	×	–			–	×	o					–	×	×	×	–
Acetic Acid, Dilute	o	o	×	×	–	o	×	×	×	×	–	–	–	o	+	×	×	+	×	×	×	×	×	×	×		×	×	×	×	×		×		×			×	–	o	×	o		×	×	×	×	×	×	×	×	–	–	×	×	×	×	–	×	×	×	o	–	–	×	×	×	×	×		×	×	×	×	×	o	×	×	×	×	×	× ×
Acetic Anhydride, $(CH_3CO)_2$ O	–	+	×	×	×	–	×	×	×	–	–	o	–	–	+	+	×	+	×	×	×		×	×	×		×		×	×	×	×	×		×			×	–	o	–	o	o	o	o		o	o	o			o	o	–		×		+			o			–	o	×	×	×				o	–	×								
Acetone, CH_3 $COCH_3$	×		×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		×		×			×		×		×	×	×		×	×	×			o	o	o	×	–	o	o	o	o	o	o	o	o	o	o		o		×	o	+	o	×	–	o	o	–	o		–	–	×	×	×		×	×						
Acetyl Chloride, CH_3COCl	o		–	×			×		×	o			+						×	×										×					×																				×	×																		×									
Aluminum Chloride, $AlCl_3$	o	o	o	o	o	–	×	o	×	–	o	o	o	–	–	×	+	×	×	×	–	×	×	×	×		×		×	×	×	×	×		×			×	×	×	×	×	×	×				×			×	×	×	×	×	×	×	×	×		×	×	×	×	×	×	×	×			×	×	×	×	×								
Aluminum Hydroxide, $AL(OH)_3$			×	×			×	×	+	×	×		+	+					×	×			×							×					×								×								×	×		×	×		×															×	×									
Aluminum Sulfate, Al_2 (SO4)$_3$	o		–	–	×	–	×	×	×	–	×	×	–	–	–	×	×	×	×	×	×	×	×	×	×		×		×	×	×		×	×	×			×	×	×	×	–	×	×				×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	–	×	×	×			×		×	×	×	×	×		×	×	–	×	×
Alums, Conc., $Al_2(SO_4)_3K_2SO_4$, etc.	o		o	–	–		+		×	–	–	×							×	×			×		×				×	×					×					×											×	×	×	×	×	×	×	×							×	×					×		×									
Alums, Dilute	o	o	×	–	–	–	×	×	×	–	×	+	+	+		+	+		×	×		×	×	×	×				×	×	×	×	×	×	×			×	×	×	×	×		×				×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	–	×	×	×			×	×	×	×	×				×	×	–	×	×
Amines, various	×	×	×	×	×		×	×	×	–	–					×	×	×	×	×	×		–	×	×				×	×			×		×			–					o									o			×	×									×	×							×	×								
Ammonia (Gas), Moist, NH_3	×		×	×	×	×	×		×	o	o	–	–	–	–	×	×	×	×	×	×		–	×	×	×	–		×	×	×	o	×	×	×			–	–	×	×		o		–	×	×		×		×	–		o	×	×	–	×	×		o	×	×	×			×	–			×	×	–	×								
Ammonium Carbonate, $(NH_4)_2CO_3$	+	+	+	+	×		×		×	–	–		+	×	+	+	+	+	×	×			×							×		×			×			×				o		×							×	×		×	×	×	×	×			×						×	×			×	×	×	×								
Ammonium Chloride, NH_4Cl	o	o	o	–	–	×	×	×	×	o	o	–	+	+	–	+	+	×	×	×	–	×	×	×	×		×	+	×	×	×	×	×	×	×	×		×	×	×	×	–	×	×	×	×		×	×	×	×	×	×	×	×	×	×	×	×		×	×	×	×	×	×	×	×		×	×	×	×	o		+**						
Ammonium Hydroxide, NH_4OH	×	×	×	×	×	×	×		+	o	–	+	o	o	×	+	+	+	×	×	×	×	–	×	×	×	×	–	×	–			×		×			–	×	–		×	+	–					×		×	×	–	o	×	×	×	×			×	o			×	×	o	o			×	×	–	×	×	×						
Ammonium Nitrate, NH_4NO_3	–		×	×	×	–	×	×	×	o	o		×		–	o	×	o	×	×			×						×	×	×		×		×	×		–	–	–	×		+	×	×			×	×		×	×		×	×	×	×	×	–		×	×	×	×			×	×		×	×		×	×		×						
Ammonium Persulfate, $(NH_4)_2S_2O_8$	o		×	×	×		×	×	×	–	–		o	o	–	o	×	o	×	×			×							×														×								×	×		×	×		×															×	×	×									

TABLE A.3 (continued)

Chemical Resistance of Materials

	METALS																												CARBONS & CERAMICS									RUBBERS					THERMOPLASTICS															THERMOSETTING PLASTICS																				WOODS				
MATERIALS × — Very Good Service + — Moderate Service – — Limited or Variable Service o — Unsatisfactory Blank — No Information CHEMICALS Solids Assumed in Solution Room Temperatures Assumed Unless Otherwise Stated"	Carbon Steel; Fe	Cast Iron & Ductile Iron; Fe	304 Stainless Steel; Fe, 18Cr, 8Ni	316 Stainless Steel; Fe 16Cr, 10Ni, 2Mo	347 Stainless Steel; Fe, 17Cr, 9Ni; (Cx10)Cb	Ni-Resist Iron; Fe 14Ni, 2Cr, 2Si	Durimet 20; Carpenter 20; Fe; 4Cu, 20Cr, 29Ni, 2Mo, 1Si	Worthite; 3Mo, 2Cu, Fe, 20Cr, 24Ni, 3Si	Durorpm; Fe, 14Si; Durichlor, Fe, 14Si, 3Mo*	Copper; Brass; Bronzes; Everdur	Aluminum; Al (and Alloys)	Lead; Pb	Monel; 67Ni, 30Cu, 1.4Fe	Nickel; Ni	Inconel; 76Ni, 15Cr, 8Fe	Hastelloy B; Ni, 26Mo, 4Fe	Hastelloy C; Ni, 16Mo, 4Fe, 14Cr, 4W	Hastelloy D; Ni, 8Si, 3Cu	Chlorimet 3; 3Fe, 1Si, 60Ni, 18Mo, 18Cr	Chlorimet 2; 63Ni, 32Mo, 3Fe, 1Si	Stellite; Co, 28Cr, 4W	Zirconium; Z	Tantalum; Ta	Silver; Ag	Platinum; Pt	Dowmetal; (Mg alloys)	Titanium; Ti	Molybdenum; Mo	Carbon & Graphite	Glass, "Pyrex" brand	Silicaware	Silicate Cements	Chemical Stoneware	Transite (asbestos & cement)	Chemical Porcelain	Concrete—Unbonded	Concrete—Motor Bonded	Hard Rubber (Natural)	Soft Rubber (Natural)	Neoprene	Butadiene Derivatives	Nitrile Rubber (Chemigum)	Viton	Asphaltic, Bitumastic	Cellulose Acetate	Cellulose Acetatebutyrate	Ethyl Cellulose (Ethocel)	Cellulose Nitrate	Acrylic (Lucite, Plexiglas)	Coumarone Resins	Polyethylene	Polyvinyl Chloride, Rigid or Unplasticized	Tygon (PVC & Copolymers)	Saran (Vinyl Chloride, Vinyldene Chloride)	Kel-F (Polytrifluorochloroethylene)	Teflon (Polytetrafluoroethylene)	Uscolite CP (Styrene–Acrylonitrile–Butadiene)	Penton (Chlorinated Polyether)	Shellac Compounds	Organic Polysulfides	Polystyrene (Styron)	Vinylidene Chlorides	Vinyl Chloride Acetates	Cast Phenol Formaldehyde	Haveg 41 (Phenolic w. Asbestos)	Heresite (Phenol Formaldehyde)	Molded Phenolformald (Durez)	Phenol Furfural Plastics	Urea Formaldehyde	Casein Plastics	Epoxy Resins	Furane Resins (Haveg 61, Duralon)	Silicone Resins	Permanite (Furan, Glass Fiber)	Nylon (Adipic Acid–Hexameth, Diamine)	Durcon 6 (Modified Epoxy)	Cypress	Fir	Maple	Oak	Pine	Redwood
Ammonium Phosphate, (NH$_4$)$_1$H$_2$PO$_4$	o		×	×		–	×		×	o									×	×										×					×																	×			×	×	×	×															×									
Ammonium Phosphate, (NH$_4$)$_2$HPO$_4$	–		×	×		×	×		×	–	–								×	×										×					×																	×			×	×	×	×															×									
Ammonium Phosphate, (NH$_4$)$_3$PO$_4$	×	–	×	×	×	×	×	×	×	o	–	×	×	×	×	×	×	×	×	×	×		×						×	×			×		×			×													×	×	×		×	×	×	×							×	×								×									
Ammonium Sulfate, (NH4)$_2$SO$_4$	×		–	–	–	×	×	×	×	–	–	–	+	+	×	×	×	×	×	×	×	×	×	×	×		×		×	×	×		×		×			×	×	×	×			×				×	×	×		×	×	×	×	×	×	×	×	×		×	×	×	×	×	×	×		×	×		×	o								
Amyl Acetate, C$_5$H$_{11}$COOCH$_3$	–		×	×	×	×	×	×	×	–	×		+	+	+	×	×	×	×	×				×					×	×	×		×		×	×		o	o	o	o		o	o	o	o	o	o	o	o	–	o		o	×	×		×	o		o	o	×	–			–	–		×	×		×	×	×							
Amyl Alcohol, C$_5$H$_{11}$OH	×		×	×			×		×	×	×								×	×									×	×	×		×	×	×			–	–	×	×		×	o	×	o	o	o	×	–	–	×		×	×	×	×	×	o		×	–	–	×			×	×		×	×		×	×								
Amyl Chloride, C$_5$H$_{11}$Cl	×		–	–	–		×	–	×	×	o		–	+	–	×	×	×	×	×			×						×	×	×		×		×			–	o	–	×		–	o								o		×	×	×		×				×	×	–			–	–		×	×		×									
Antimony Trichloride, SbCl$_3$	o		o	o	o				×	–	o	×	×	×	×	×	×		×	×			×							×	×		×		×						×		×				–				×		×	×	×	×	×													×		o	×									
Arsenic Acid, HAsO$_8$	o		–	–		×	×	×	×	–		–			–				×	×			×	×					×	×					×					×			×								–	×			×	×		×															×	×								
Barium Carbonate, BaCO$_3$			×	×	×		×	×	×	×	o		+	×	×	×	×	×	×		×	×					×			×					×								×									×			×	×	×	×												×		×	×								
Barium Hydroxide, Ba(OH)$_2$	×			×		×	×	×	+	o	o		×	×		+	+	+	×	×		×	×				+			×					×								×	×							×	×			×	×	×	×												×		×	×								
Barium Sulfide, BaS	o		×	×		×	×	×	×	o	o		–						×	×				o						–					×			×					×								×	–	×	×	×	×	×	×														×	×								
Benzaldehyde, C$_6$H$_5$CHO	×		×	×			×		×		–	o							×	×									×	×	×		×	×	×	×		o	o	o	×			o							o	o		–	×	×		–	o			×		×			×	×			–		×	×								
Benzene, C$_6$H$_6$	+	+	×	×	×	×	×	×	×	×	×	+	+	+	×	+	+	+	×	×	×		×	×	×	×			×	×		×	×		×			o	o	o		o	–	o	–	o	o		o		–	o	o	–	×	×		+			o		o		–	×	×	×			×	×	×	×	×**							
Benzoic Acid, C$_6$H$_5$COOH	o		×	×	+		×	×	×	+	×	o	+	+	+	×	×	×	×	×			×	×						×					×						×		×								×	×	×	×	×		×													×		o	+**								
Borax, Na$_2$B$_4$O$_7$	×	–	×	×	×	×	×		×	–	–	×	×	×					×	×				o					×	×	×		×	×	×	×		×	×	×	×	o ×	×	×	×	×	×	×	×	×		×			×	×	×	×	×		×	×	×	×			×	×					×	×	×			–	–	–	×	–
Boric Acid, H$_3$HO$_3$	o	o	+	+	+	–	×	×	×	+	+	+	+	+	×	×	×	×	×	×	×		×	×	×		×		×	×		×	×		×			×	×	×		× ×	×									–	×	×	×	×	×	×							×	×	×	×				×	×	×	×							
Bromine, Wet, Br$_2$	o		o	o	o	o	o	o	o	o	o	–	o	o	o	o	×	o	×	o	–		×	o	–		o		o	×	×		×		×	×		–	o		–	× ×	–	o							o	o	–	o	×	×		–			–				o	×	–	–	–		o	o	o	o	×**							
Butanol, C$_4$H$_2$OH	×		×	×			×		×	×	×		×	×	×	×	×	×	×	×										×					×			–	–	–		× ×							×			×		×	×	×	×	×												–		×	×								
Butyl Acetate, C$_4$H$_9$COOCH$_3$	–			×			×	×	×	×	×	×	+			×	×	×	×	×			×			–			×	×	×		×	×	×	×	×	o	o	o	o		o	o	o	o	o	o	o			o		o	×	×		+			o	o	o	–			–	–	o	×	×		×									
Butyric Acid, C$_3$H$_7$COOH	o	o	o	×	o		×	×	×	–	–	o	+	+	+	×	×	×	×	×			×				×			×					×			×	–	o			o	o								o		–	×	×		×												–		o	×								
Calcium Bisulfate, CaHSO$_4$	o		o	×		o	×			o	o		o	o					×	×										×					×																				×	×																	×									

(*continued*)

TABLE A.3 (continued)

Chemical Resistance of Materials

	METALS																												CARBONS & CERAMICS									RUBBERS					THERMOPLASTICS															THERMOSETTING PLASTICS																				WOODS				
MATERIALS × — Very Good Service + — Moderate Service − — Limited or Variable Service o — Unsatisfactory Blank — No Information CHEMICALS Solids Assumed in Solution Room Temperatures Assumed Unless Otherwise Stated	Carbon Steel; Fe	Cast Iron & Ductile Iron; Fe	304 Stainless Steel; Fe, 18Cr, 8Ni	316 Stainless Steel; Fe 16Cr, 10Ni, 2Mo	347 Stainless Steel; Fe, 17Cr, 9Ni; (Cx10)Cb	Ni-Resist Iron; Fe 14Ni, 2Cr, 2Si	Durimet 20; Carpenter 20; Fe; 4Cu, 20Cr, 29Ni, 2Mo, 1Si	Worthite; 3Mo, 2Cu, Fe, 20Cr, 24Ni, 3Si	Durorpm; Fe, 14Si; Durichlor, Fe, 14Si, 3Mo*	Copper; Brass; Bronzes; Everdur	Aluminum; Al (and Alloys)	Lead; Pb	Monel; 67Ni, 30Cu, 1.4Fe	Nickel; Ni	Inconel; 76Ni, 15Cr, 8Fe	Hastelloy B; Ni, 26Mo, 4Fe	Hastelloy C; Ni, 16Mo, 4Fe, 14Cr, 4W	Hastelloy D; Ni, 8Si, 3Cu	Chlorimet 3; 3Fe, 1Si, 60Ni, 18Mo, 18Cr	Chlorimet 2; 63Ni, 32Mo, 3Fe, 1Si	Stellite; Co, 28Cr, 4W	Zirconium; Z	Tantalum; Ta	Silver; Ag	Platinum; Pt	Dowmetal; (Mg alloys)	Titanium; Ti	Molybdenum; Mo	Carbon & Graphite	Glass, "Pyrex" brand	Silicaware	Silicate Cements	Chemical Stoneware	Transite (asbestos & cement)	Chemical Porcelain	Concrete—Unbonded	Concrete—Motor Bonded	Hard Rubber (Natural)	Soft Rubber (Natural)	Neoprene	Butadiene Derivatives	Nitrile Rubber (Chemigum)	Viton	Asphaltic, Bitumastic	Cellulose Acetate	Cellulose Acetatebutyrate	Ethyl Cellulose (Ethocel)	Cellulose Nitrate	Acrylic (Lucite, Plexiglas)	Coumarone Resins	Polyethylene	Polyvinyl Chloride, Rigid or Unplasticized	Tygon (PVC & Copolymers)	Saran (Vinyl Chloride, Vinyldene Chloride)	Kel-F (Polytrifluorochloroethylene)	Teflon (Polytetrafluoroethylene)	Uscolite CP (Styrene–Acrylonitrile–Butadiene)	Penton (Chlorinated Polyether)	Shellac Compounds	Organic Polysulfides	Polystyrene (Styron)	Vinylidene Chlorides	Vinyl Chloride Acetates	Cast Phenol Formaldehyde	Haveg 41 (Phenolic w. Asbestos)	Heresite (Phenol Formaldehyde)	Molded Phenolformald (Durez)	Phenol Furfural Plastics	Urea Formaldehyde	Casein Plastics	Epoxy Resins	Furane Resins (Haveg 61, Duralon)	Silicone Resins	Permanite (Furan, Glass Fiber)	Nylon (Adipic Acid–Hexameth, Diamine)	Durcon 6 (Modified Epoxy)	Cypress	Fir	Maple	Oak	Pine	Redwood
Calcium Bisulfate, $CaHSO_3$	×		o	×		o	×	×	o	−	−	×	o						×	×							×			×	×		×		×			×	×	×	×											×		×	×	×		×						×			×	×					×									
Calcium Carbonate, $CaCO_3$	×		×	×		×	×	×	×	×	o	×	×	×	×	×	×	×	×	×			×				×			×					×			×	×	−			×									×		×	×	×		×																×	×								
Calcium Chlorate, $CaClO_3$			−	×	o		+	−	+	−			+	+	+		+	+	+	+			×						×	×					×									×								×			×	×	×	×													×		×									
Calcium Chloride, $CaCl_2$	+	+	−	−	−	−	+	×	×	+	−	o	+	+	+	+	×	+	×	×	−	×	×				×		×	×	×	×	×	×	×	×		×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	−	×	×	−	−			×	×	×	o	×		×	×	×	×	×	−
Calcium Hydroxide, $Ca(OH)_2$	×		×	×	×	×	×	×	+	+	−		×	×	×	×	×	×	×	×			×				×			×					×			×	×	×			×	×								×		×	×	×	×	×													×		×	×	×							
Calcium Hypochlorite, $Ca(OCl)_2$	−	o	o	−	−	−	−	−	×	o	o	o	o	o	o	o	−	o	−	o	o	×	×		×		×		×	×	×	o	×		×	×		×	×	o	×	−		−							×	×	×	×	×	×	×	×		×	×		×	o	−	−	o	o			×	×	o	×	o			o	o	o	−	o
Calcium Sulfate, $CaSO_4$	−		×	×			×	×	×	×	−		+			+	+	+	×	×			×							×					×			×	×	×			×	×								×		×	×	×	×	×													×		×	×								
Carbon Dioxide (Dry), CO_2	×		×	×	×	×	×		×	×	×	×	×	×	×	×	×		×	×				×				×		×					×			×	×	×				×								×		×		×	×	×													×		o									
Carbon Dioxide (Wet or H_2CO_3)	−	−	×	×	×	−	×	×	×	−	−	−	−	×	×	×	×	×	×	×	×		×	×					×	×	×		×	×	×	×	×	×	×	×	×			×	×	×	×	×	×	×	×	×	×	×		×	×	×	×	×	×	×	×	×	×	×	×	×	×	×			×	×				×	×	×	×	×
Carbon Disulfide, CS_2	×	+	+	+	×	×	×	×	×	−	−	+	+	+	+				×	×			×	−					×	×	×	×	×		×			o	o	o	×		×	o	o	o	o	×	×		o	o		−	×	×		−	−		o	o		×			×	×			o	×	×	×	×							
Magnesium Chloride, $MgCl_2$	−	−	−	+	−	×	×	×	×	+	−	o	+	+	+	×	×	×	×	×	−		×	×			×			×	×	×	×	×	×	×	×	×	×	×	×		×	×	×	×		×		×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		×	×	×	×								
Magnesium Hydroxide, $Mg(OH)_2$	×		×	×	+		×	×	+	−	o		×	×	×	×	×	×	×	×			×	×			×			×					×			×			×		×									×		×	×	×	×	×																×	×								
Magnesium Sulfate, $MgSO_4$	+	o	+	+	+	×	×	×	×	+	×	+	+	+	+	×	+	×	×	×		×	×	×			×			×	×	×	×	×	×	×	×	×	×	×	×		×	×	×	×		×		×	×	×		×	×	×	×	×	×	×	×	×	×	×			×	×	×		×	×	×	×								
Maleic Acid; $CO_2HC_2H_2CO_2H$	o		×	×			×	×	×							×			×	×				×						×					×					×			+	o								−		−	×	×	×	×													×		×	+**								
Malic Acid, $CO_2HCH_2CHOHCO_2H$	o		×	×	×		+		×	o	−		+	+	+	×	×	×	×				×							×	×		×		×			×	×	×	×		−									×			×	×		×			×													×	×								
Mercuric Chloride, $HgCl_2$	o		o	o	o		−	−	+	o	o	−	−		+	o	×	o	+	o		×	×	o			×			×					×			×	−				×	×	×							−	×	×	×	×	×	×													×		×									
Mercury, Hg	×		×	×	×		×		×	o	o	o	+	+	×	×	×	×	×	×				o			−			×					×								×	×								−		×		×		×													×		×	×								
Methanol, (Conc.), CH_3OH	+	+	+	+	+	×	×	×	×	+	−	+	+	+	+	×	×	+	×	×		×	×	×						×		×			×			−	×	−		×	−	×					o		−	×		×	×	×	×	×			×				−		×	×			×	×	×	×								
Methanol, (Dilute)	−						×		×	−	−					×	×	−	×	×			×							×					×			×	×													×			×	×	×	×			×						×	×			×		×	×								
Methyl Chloride, CH_3Cl	o		−	−	+		×	×	×	×		×	×	×	×				×	×			×							×					×			o	o				−	o								o		−	×	×		×													×		×	×								
Naphtha, Petroleum	×		×	×	×	×	×		×	×	×		+	+	+	×	×	×	×	×									×	×	×		×		×			−	o	×	×		+	o				×	×			×			×	×		×			−	−	−	−			−	−		×	×		×	×								

TABLE A.3 (continued)

Chemical Resistance of Materials

	METALS																												CARBONS & CERAMICS									RUBBERS					THERMOPLASTICS															THERMOSETTING PLASTICS																				WOODS				
MATERIALS × — Very Good Service + — Moderate Service – — Limited or Variable Service o — Unsatisfactory Blank — No Information CHEMICALS Solids Assumed in Solution Room Temperatures Assumed Unless Otherwise Stated	Carbon Steel; Fe	Cast Iron & Ductile Iron; Fe	304 Stainless Steel; Fe, 18Cr, 8Ni	316 Stainless Steel; Fe 16Cr, 10Ni, 2Mo	347 Stainless Steel; Fe, 17Cr, 9Ni; (Cx10)Cb	Ni-Resist Iron; Fe 14Ni, 2Cr, 2Si	Durimet 20; Carpenter 20; Fe; 4Cu, 20Cr, 29Ni, 2Mo. 1Si	Worthite; 3Mo, 2Cu. Fe, 20Cr, 24Ni, 3Si	Durorpm; Fe, 14Si; Durichlor, Fe, 14Si, 3Mo*	Copper; Brass; Bronzes; Everdur	Aluminum; Al (and Alloys)	Lead; Pb	Monel; 67Ni, 30Cu, 1.4Fe	Nickel; Ni	Inconel; 76Ni, 15Cr, 8Fe	Hastelloy B; Ni, 26Mo, 4Fe	Hastelloy C; Ni, 16Mo, 4Fe, 14Cr, 4W	Hastelloy D; Ni, 8Si, 3Cu	Chlorimet 3; 3Fe, 1Si, 60Ni, 18Mo, 18Cr	Chlorimet 2; 63Ni, 32Mo, 3Fe, 1Si	Stellite; Co, 28Cr, 4W	Zirconium; Z	Tantalum; Ta	Silver; Ag	Platinum; Pt	Dowmetal; (Mg alloys)	Titanium; Ti	Molybdenum; Mo	Carbon & Graphite	Glass, "Pyrex" brand	Silicaware	Silicate Cements	Chemical Stoneware	Transite (asbestos & cement)	Chemical Porcelain	Concrete—Unbonded	Concrete—Motor Bonded	Hard Rubber (Natural)	Soft Rubber (Natural)	Neoprene	Butadiene Derivatives	Nitrile Rubber (Chemigum)	Viton	Asphaltic, Bitumastic	Cellulose Acetate	Cellulose Acetatebutyrate	Ethyl Cellulose (Ethocel)	Cellulose Nitrate	Acrylic (Lucite, Plexiglas)	Coumarone Resins	Polyethylene	Polyvinyl Chloride, Rigid or Unplasticized	Tygon (PVC & Copolymers)	Saran (Vinyl Chloride, Vinyldene Chloride)	Kel-F (Polytrifluorochloroethylene)	Teflon (Polytetrafluoroethylene)	Uscolite CP (Styrene–Acrylonitrile–Butadiene)	Penton (Chlorinated Polyether)	Shellac Compounds	Organic Polysulfides	Polystyrene (Styron)	Vinylidene Chlorides	Vinyl Chloride Acetates	Cast Phenol Formaldehyde	Haveg 41 (Phenolic w. Asbestos)	Heresite (Phenol Formaldehyde)	Molded Phenolformald (Durez)	Phenol Furfural Plastics	Urea Formaldehyde	Casein Plastics	Epoxy Resins	Furane Resins (Haveg 61, Duralon)	Silicone Resins	Permanite (Furan, Glass Fiber)	Nylon (Adipic Acid–Hexameth, Diamine)	Durcon 6 (Modified Epoxy)	Cypress	Fir	Maple	Oak	Pine	Redwood
Nickel Chloride, $NiCl_2$	o		−	−			+	o	+	−	o		−	×		o	×	o	×	×		×	×				×		×	×					×			×	×				×	×							×	×	×	×	×	×	×	×														×	×	×									
Nickel Sulfate, $NiSO_4$	o	o	−	−			×	×	×	+	−	+	+	−	−	o	+	o	×	×		×	×						×	×					×			×	×	×			×	×							×	×	×	×	×	×	×	×			−						×	×			×	×	×	×								
Nitrating Acid (>15% H_2SO_4)	×	×	−	−	−		×	×	×	o	o		o	o		o	×	o	×	×	×		−	×	×		−		o	×			×		×			−	−					o									o		×	×									o	×					o		×**									
Nitrating Acid (<15% H_2SO_4)	o		−	−	−		×	×	×	o	o		o	o		o	×	o	×	×	×		−	o	×		×		o	×			×		×			−	−					o									−		×	×									−	×							×									
Nitrating Acid (<15% HNO_3)	o		−	o	−		×		×	o	o		o	o		o	×	o	×	o	×	o	−	o	×		−		o	×			×		×			−	−					o									−		×	×									−	×							×									
Nitrating Acid (>1% Acid)	o		−	×	−		×		×	o	o		o	o		o	×	o	×		×	o	−	o	×				o	×			×		×			−	−					o									−		×	×									−	×							×**									
Nitric Acid (Conc.), HNO_3	o	o	+	+	×		×	×	×	o	−	−	o	o	−	o	+	o	×	o	×	×	×	o	×		×	+	o	×	×	×	×		×			o	o	o	o	o	o				o				o	o	o	−	×	×	o	o			o	o	o	o	o	×	o	o			o	o	−	o	o	×						
Nitric Acid, Dilute	o	o	×	×	×	o	×	×	×	o	o	o	o	o	o	o	×	o	×	o	×	×	×	o	×		×	o	−	×	×		×		×			−	o	o	×	o	−	−			−		×		−	×	−	×	×	×	×	+			×	−	−	−	−	×	−	−			o		−	o	×							
Nitrobenzene, $C_6N_5NO_2$	×		×	×			×	×	×			o							×	×			×							×					×			o	o	o			o	o							−	o		−	×	×		+													−		×									
Nitrous Acid, HNO_2	o		×	×	−		×	×	×	×			×	o					×				×							×	×		×		×			−	o	o	×			×											×	×		×		×													×									
Oleic Acid, C_8H_{17} CH: $CH(CH_2)_7CO_2H$	−	−	−	×	×	−	×	×	×	−	×	o	×	×	×	×	×	×	×	×	×		×	×	×				×	×	×		×	×	×	×	×	o	o	o	×		+	o	×	×		×			o	×	×	×	×	×	×	×			×	×	×	−	×	×	×	−	×		×		×	×	×			×	×	×		−
Oxalic Acid, CO_2HCO_2H	o	o	−	−	−	−	×	×	×	+	−	o	+	−	×	+	+	+	×	×	×	×	×	×	×		−	+	×	×	×	×	×	×	×	×		×	×	−	×		−	×							×	×	×	×	×	×	×	×			×			×	×	×	×	×			×	×	×	o	×							
Phenol (Conc.), C_6H_5OH	+	+	−	×	−	×	×	×	×	o	−	−	+	+	×	+	+	+	×	×	×	×	×	×	×	×	−		×	×	×		×	×	×	×		−	o	−	×		×	o	o	o	−		×			−	−	−	×	×	o	+			o			−	−	×	−	−				×	×	o	×							
Phenol (Dilute)	+	+	×	×	×		×		×	−	×	−	+	+	−	+	+	+	×	×		×								×					×			−		−				−								×	−	−	×	×	o				o						×	×			−	×	×									
Phosphoric Acid (100%) H_3PO_4	o	o	−	−	×		×		×		o	+	−	o	−	+	×	×	×	×	×	×	×	+	×			×	+	−	×		×	×	×	×	×	×	×	×	×			×	×		o				×	×	×		×	×	×					×	×		×	×						−	−	−	−	×						
Phosphoric Acid (>45% Hot)	o	o	o	o	×	o	×	×	×	o	o	+	o	o	o	−	−	−	×	×	×	−	×		×				×	−		×			o			−	−	−		×	+								−	×	×		×	×	×								×	×	o	o			×	×	o	×								
Phosphoric Acid (>45% Cold)	o	o	−	×	×	−	×	−	×	o	o	+	−	−	−	+	×	+	×	×	×	×	×	×	×		−		×	×			−		−			−	−	−			×							×	×	×	×		×	×	×			×				×	×					×		−	×									
Phosphoric Acid (<45% Cold)	o	o	−	×	×	−	×	−	×	o	−	+	−	−	−	+	×	+	×	×	×	×	×	×	×		×		×	×			−		−			×	×	−											×	×	×	×		×	×	×							×	×							−	×	o	×						
Phosphoric Anhydride, Dry or Moist	o		×	×			×		×										×	×									×	×																						×					×																		×									
Phosphoric Anhydride Molten, P_2O_5	×		×	×			×		×	o	o		o	o					×	×										o																										×																	×									
Phthalic Anhydride, $C_6H_4(CO)_2O$	×		×				×	×	×							×	×		×	×			×							×					×			×	×					×										×		×															×		×									
Picric Acid, Solution, $HOC_6H_2(NO_3)_3$			×	×	+		×	×	×	o	−	−	o	o	o	×	×	×	×	×										×					×					−				o								o	×	o		×		×															×									

(*continued*)

TABLE A.3 (continued)

Chemical Resistance of Materials

MATERIALS
× — Very Good Service
+ — Moderate Service
− — Limited or Variable Service
o — Unsatisfactory
Blank — No Information
CHEMICALS
Solids Assumed in Solution
Room Temperatures Assumed
Unless Otherwise Stated

	METALS																											
CHEMICALS	Carbon Steel; Fe	Cast Iron & Ductile Iron; Fe	304 Stainless Steel; Fe, 18Cr, 8Ni	316 Stainless Steel; Fe 16Cr, 10Ni, 2Mo	347 Stainless Steel; Fe, 17Cr, 9Ni; (Cx10)Cb	Ni-Resist Iron; Fe 14Ni, 2Cr, 2Si	Durimet 20; Carpenter 20; Fe; 4Cu, 20Cr, 29Ni, 2Mo. 1Si	Worthite; 3Mo, 2Cu, Fe, 20Cr, 24Ni, 3Si	Durorpm; Fe, 14Si; Durichlor, Fe, 14Si, 3Mo*	Copper; Brass; Bronzes; Everdur	Aluminum; Al (and Alloys)	Lead; Pb	Monel; 67Ni, 30Cu, 1.4Fe	Nickel; Ni	Inconel; 76Ni, 15Cr, 8Fe	Hastelloy B; Ni, 26Mo, 4Fe	Hastelloy C; Ni, 16Mo, 4Fe, 14Cr, 4W	Hastelloy D; Ni, 8Si, 3Cu	Chlorimet 3; 3Fe, 1Si, 60Ni, 18Mo, 18Cr	Chlorimet 2; 63Ni, 32Mo, 3Fe, 1Si	Stellite; Co, 28Cr, 4W	Zirconium; Z	Tantalum; Ta	Silver; Ag	Platinum; Pt	Dowmetal; (Mg alloys)	Titanium; Ti	Molybdenum; Mo
Potassium Bromide, KBr	o		−	−				×		×	−	×	+	×		×	×	×	×	×			×	o			×	
Potassium Carbonate, K_2CO_3	−		×	×		−	×	×	×	−	o	×	×	×	+	×	×	×	×	×			−					
Potassium Chlorate, $KClO_3$	×		×	×			×	−	×	−	+		+	+	+	o	×	o	×	o			×					
Potassium Chloride, KCl	×		−	−		×	×	×	×	−	−		+	+		×	×	×	×	×			×				×	
Potassium Cyanide, KCN	×		×	×		×	×		×	o	o		×			×	×	×	×	×			×	o	×			
Potassium Dichromate, $K_2Cr_2O_7$			×	×	−		×	×	×	×	×		−	−	+	o	×	o	×	×		×	×	o			×	
Potassium Ferrocyanide, $K_4Fe(CN)_6$	o		×	×			×	×	×	×	−	×	×	×	×	×	×	×	×	×			×	o				
Potassium Hydroxide, KOH	+	−	+	+	−	−	×	×	+	o	o	o	×	×	×	+	+	+	×	×		×	−	×			−	+
Potassium Nitrate, KNO_3	×		×	×	×		×	×	×	×	×	−	+	+	+	o	×	o	×	×			×	o				
Potassium Permanganate, $KMnO_4$	+	+	+	+	+		×	×	×	×	×	o	−	+	+	o	×	o	×	o			×				×	
Potassium Sulfate, K_2SO_4	×		+	+	+	×	×	×	×	+	×	×	+	+	+	+	+	+	×	×			×				×	
Potassium Sulfide, K_2S	−		×	×		−	×		×										×	×				o				
Pyrogallol, $C_6H_3(OH)_3$			×	×			×		×	×				+		×	×	×	×	×								
Silver Nitrate, $AgNO_3$			×	×			×	×	×	o	o	o			+	+	+	+	×	×		×	×					
Sodium, Molten 210 –400°F	×	×	×	×	×		×	×	×	×	×		×	×	×	×	×		×	×		×	×			−		×
Sodium Acetate, $NaCH_3COO$	o		−	×			×	×	×	×	−	×	+			×	×	×	×	×							×	
Sodium Bicarbonate, $NaHCO_3$	−		×	×	×	×	×	×	×	−	×	×	×	×	×	×	×	×	×	×		×	×	×				
Sodium Bisulfate, $NaHSO_4$	o	o	−	×	×		×	×	×	−	o	×	+			×	×	×	×	×	×		−		×		×	
Sodium Bisulfite, $NaHSO_3$	o		×	×			×	×		−	×	×							×	×								
Sodium Borate $NaBO_2$			×	×			×		×	×	−		+			×	×	×	×	×			×					
Sodium Carbonate, Na_2CO_3	+	+	+	+	×	×	×	×	×	+	o	−	+	+	−	+	×	×	×	×	×		−	×	×	×	×	
Sodium Chlorate, $NaClO_3$	−		×	×			−	−	×	+	+				+	o	×	o	×	o			×				×	

	CARBONS & CERAMICS									RUBBERS				
CHEMICALS	Carbon & Graphite	Glass, "Pyrex" brand	Silicaware	Silicate Cements	Chemical Stoneware	Transite (asbestos & cement)	Chemical Porcelain	Concrete—Unbonded	Concrete—Motor Bonded	Hard Rubber (Natural)	Soft Rubber (Natural)	Neoprene	Butadiene Derivatives	Nitrile Rubber (Chemigum)
Potassium Bromide, KBr		×					×			×		×		
Potassium Carbonate, K_2CO_3		−					×			×		×		
Potassium Chlorate, $KClO_3$		×					×							
Potassium Chloride, KCl		×					×			×		×		
Potassium Cyanide, KCN		−					×			×		×		
Potassium Dichromate, $K_2Cr_2O_7$		×					×			−	×	×		
Potassium Ferrocyanide, $K_4Fe(CN)_6$		×					×							
Potassium Hydroxide, KOH		−		o			−			×	×	×		o
Potassium Nitrate, KNO_3		×					×			×		×		
Potassium Permanganate, $KMnO_4$		×					×			−	o	o		
Potassium Sulfate, K_2SO_4		×		×			×			×		×		×
Potassium Sulfide, K_2S		−					×							
Pyrogallol, $C_6H_3(OH)_3$		×					×							
Silver Nitrate, $AgNO_3$		×					×			×	×			
Sodium, Molten 210 –400°F		−					o							
Sodium Acetate, $NaCH_3COO$		×					×					×		
Sodium Bicarbonate, $NaHCO_3$	×	×	×		×	×	×	×	×	×	×	×	×	
Sodium Bisulfate, $NaHSO_4$	×	×	×		×		×			×	×	×	×	
Sodium Bisulfite, $NaHSO_3$	×	×	×		×		×			×	×	−	×	
Sodium Borate $NaBO_2$		×	×			×	×	×		×	×	×	×	
Sodium Carbonate, Na_2CO_3	×	−	−	o	×	×	×	×		×	×	×	×	×
Sodium Chlorate, $NaClO_3$		×	×		×	×	×	×	×	×	×	×		×

	THERMOPLASTICS														
CHEMICALS	Viton	Asphaltic, Bitumastic	Cellulose Acetate	Cellulose Acetatebutyrate	Ethyl Cellulose (Ethocel)	Cellulose Nitrate	Acrylic (Lucite, Plexiglas)	Coumarone Resins	Polyethylene	Polyvinyl Chloride, Rigid or Unplasticized	Tygon (PVC & Copolymers)	Saran (Vinyl Chloride, Vinyldene Chloride)	Kel-F (Polytrifluorochloroethylene)	Teflon (Polytetrafluoroethylene)	Uscolite CP (Styrene–Acrylonitrile–Butadiene)
Potassium Bromide, KBr										×		×		×	×
Potassium Carbonate, K_2CO_3	×	×							×	−		×		×	×
Potassium Chlorate, $KClO_3$	×									×		×		×	×
Potassium Chloride, KCl	×	×							×	×		×		×	×
Potassium Cyanide, KCN	×									×	×	×		×	×
Potassium Dichromate, $K_2Cr_2O_7$		×							×	×	×	×		×	×
Potassium Ferrocyanide, $K_4Fe(CN)_6$		×								×		×		×	
Potassium Hydroxide, KOH	×	×							×	×		−		×	×
Potassium Nitrate, KNO_3		×							×	×		×		×	×
Potassium Permanganate, $KMnO_4$	×	o							×	×		−		×	×
Potassium Sulfate, K_2SO_4	×	×								×		×		×	×
Potassium Sulfide, K_2S										×				×	×
Pyrogallol, $C_6H_3(OH)_3$							×				×			×	
Silver Nitrate, $AgNO_3$	×						×		×	×		×		×	×
Sodium, Molten 210 –400°F				o					o	o	o	o		−	
Sodium Acetate, $NaCH_3COO$	o	×								×		×		×	
Sodium Bicarbonate, $NaHCO_3$		×	×	×		×	×			×		×		×	×
Sodium Bisulfate, $NaHSO_4$										×	×	×		×	
Sodium Bisulfite, $NaHSO_3$		×							×	×	×	×		×	×
Sodium Borate $NaBO_2$	×	×	×	×		×	×			×	×			×	×
Sodium Carbonate, Na_2CO_3	×	×	−	×		−	o		×	×	×	×	×	×	×
Sodium Chlorate, $NaClO_3$	×	×	×		×		×	×		×		×		×	×

	THERMOSETTING PLASTICS																				WOODS				
CHEMICALS	Penton (Chlorinated Polyether)	Shellac Compounds	Organic Polysulfides	Polystyrene (Styron)	Vinylidene Chlorides	Vinyl Chloride Acetates	Cast Phenol Formaldehyde	Haveg 41 (Phenolic w. Asbestos)	Heresite (Phenol Formaldehyde)	Molded Phenolformald (Durez)	Phenol Furfural Plastics	Urea Formaldehyde	Casein Plastics	Epoxy Resins	Furane Resins (Haveg 61, Duralon)	Silicone Resins	Permanite (Furan, Glass Fiber)	Nylon (Adipic Acid–Hexameth, Diamine)	Durcon 6 (Modified Epoxy)	Cypress	Fir	Maple	Oak	Pine	Redwood
Potassium Bromide, KBr	×															×									
Potassium Carbonate, K_2CO_3	×													×		×	×								
Potassium Chlorate, $KClO_3$	×															o	×								
Potassium Chloride, KCl	×							×						×	×	×	×	×							
Potassium Cyanide, KCN	×															×	×								
Potassium Dichromate, $K_2Cr_2O_7$	×													×		×**									
Potassium Ferrocyanide, $K_4Fe(CN)_6$	×													×		×	×								
Potassium Hydroxide, KOH	×			×				o		o	o		×	×	×	×	×								
Potassium Nitrate, KNO_3	×													×		×									
Potassium Permanganate, $KMnO_4$	×			×						×	×			×	×	o	×								
Potassium Sulfate, K_2SO_4	×			×				×		×	×			×	×	×	×	×							
Potassium Sulfide, K_2S																×	×								
Pyrogallol, $C_6H_3(OH)_3$																×**									
Silver Nitrate, $AgNO_3$	×						−			−				×		×	×								
Sodium, Molten 210 –400°F	o			o	o			o	o							×									
Sodium Acetate, $NaCH_3COO$	×													×		−	×								
Sodium Bicarbonate, $NaHCO_3$	×	×		×	×	×	×	×		×	×			×	×	×	×	×							
Sodium Bisulfate, $NaHSO_4$	×			×	×	×	−	×	×	×	−		×	×	×	×	×								
Sodium Bisulfite, $NaHSO_3$	×									×			×	×		o					×	×	×	×	
Sodium Borate $NaBO_2$		×		×	×	×	×	−			−	−					×	×**							
Sodium Carbonate, Na_2CO_3	×			×			×	×	×	×	×		o	×	×	×	×	×**		+	+	+	×	+	+
Sodium Chlorate, $NaClO_3$	×	×	×	×	×	×	×			×	×	×	×			o	×	×			×	×	×	×	

TABLE A.3 (continued)

Chemical Resistance of Materials

	METALS																												CARBONS & CERAMICS									RUBBERS					THERMOPLASTICS															THERMOSETTING PLASTICS																				WOODS				
MATERIALS × — Very Good Service + — Moderate Service − — Limited or Variable Service o — Unsatisfactory Blank — No Information CHEMICALS Solids Assumed in Solution Room Temperatures Assumed Unless Otherwise Stated	Carbon Steel; Fe	Cast Iron & Ductile Iron; Fe	304 Stainless Steel; Fe, 18Cr, 8Ni	316 Stainless Steel; Fe 16Cr, 10Ni, 2Mo	347 Stainless Steel; Fe, 17Cr, 9Ni; (Cx10)Cb	Ni-Resist Iron; Fe 14Ni, 2Cr, 2Si	Durimet 20; Carpenter 20; Fe; 4Cu, 20Cr, 29Ni, 2Mo. 1Si	Worthite; 3Mo, 2Cu, Fe, 20Cr, 24Ni, 3Si	Durorpm; Fe, 14Si; Durichlor, Fe, 14Si, 3Mo*	Copper; Brass; Bronzes; Everdur	Aluminum; Al (and Alloys)	Lead; Pb	Monel; 67Ni, 30Cu, 1.4Fe	Nickel; Ni	Inconel; 76Ni, 15Cr, 8Fe	Hastelloy B; Ni, 26Mo, 4Fe	Hastelloy C; Ni, 16Mo, 4Fe, 14Cr, 4W	Hastelloy D; Ni, 8Si, 3Cu	Chlorimet 3; 3Fe, 1Si, 60Ni, 18Mo, 18Cr	Chlorimet 2; 63Ni, 32Mo, 3Fe, 1Si	Stellite; Co, 28Cr, 4W	Zirconium; Z	Tantalum; Ta	Silver; Ag	Platinum; Pt	Dowmetal; (Mg alloys)	Titanium; Ti	Molybdenum; Mo	Carbon & Graphite	Glass, "Pyrex" brand	Silicaware	Silicate Cements	Chemical Stoneware	Transite (asbestos & cement)	Chemical Porcelain	Concrete—Unbonded	Concrete—Motor Bonded	Hard Rubber (Natural)	Soft Rubber (Natural)	Neoprene	Butadiene Derivatives	Nitrile Rubber (Chemigum)	Viton	Asphaltic, Bitumastic	Cellulose Acetate	Cellulose Acetatebutyrate	Ethyl Cellulose (Ethocel)	Cellulose Nitrate	Acrylic (Lucite, Plexiglas)	Coumarone Resins	Polyethylene	Polyvinyl Chloride, Rigid or Unplasticized	Tygon (PVC & Copolymers)	Saran (Vinyl Chloride, Vinyldene Chloride)	Kel-F (Polytrifluorochloroethylene)	Teflon (Polytetrafluoroethylene)	Uscolite CP (Styrene–Acrylonitrile–Butadiene)	Penton (Chlorinated Polyether)	Shellac Compounds	Organic Polysulfides	Polystyrene (Styron)	Vinylidene Chlorides	Vinyl Chloride Acetates	Cast Phenol Formaldehyde	Haveg 41 (Phenolic w. Asbestos)	Heresite (Phenol Formaldehyde)	Molded Phenolformald (Durez)	Phenol Furfural Plastics	Urea Formaldehyde	Casein Plastics	Epoxy Resins	Furane Resins (Haveg 61, Duralon)	Silicone Resins	Permanite (Furan, Glass Fiber)	Nylon (Adipic Acid–Hexameth, Diamine)	Durcon 6 (Modified Epoxy)	Cypress	Fir	Maple	Oak	Pine	Redwood
Sodium Chloride, NaCl	+	+	−	−	−	−	×	×	+	+	−	+	+	+	−	+	+	−	×	×	−	×	×	×			×		×	×		×	×		×			×	×	×		×	×	×	×	×			×		×	×	×	×	×	×	×	×			×				×	×	×	×			×	×	×	×	×	×	×	×	×	×	+	+
Sodium Cyanide, NaCN	×		×	×			×	×	×		o	×	×						×	×				o			×			−					×			×	×	×			×	×								×	×	−		×	×	×													×		−	×								
Sodium Fluoride, NaF	o		−	−			+	−	o	−	−		+			×	×	×	×	×		×	o				×			−					×			×	×				×									×		×		×	×	×															×	×								
Sodium Hydroxide, (Conc.), NaOH	−	−	−	−	×	×	×	×	−	−	o	o	×	×	×	×	+	×	×	×	×	×	o	×	×		×		×	−	o	o	o		o			×	×	×	×	×	−	×	o	−	×	o	×		×	×	−	o	×	×	×	×			×			o	o	o	o	o	o		×	×	−	×	×	×	−	−	o	o	o	
Sodium Hydroxide (Dilute)	×	+	+	+	×		×	×	+	×	o	o	−	−	−	×	+	×	×	×	×	×	−		×	−	×	+	×	−	o	o	−		−			×	×	×	×	×		×	−	×	×	−	×		×	×	×	−	×	×	×	×		×	×	×	×	−	o	−	o	o	×		×	×	−	×	×	−		−	o	o	−	−
Sodium Hydrosulfite							×		×	−	×		o	o	o	−	×	−	×	×										×	×		×		×			×	−		×															×								×			×	×					×									
Sodium Hypochlorite, NaOCl	o	o	−	−	−	−	−	−	×	o	o	o	o	o	o	o	−	o	+	o	−		−	×	×		×		o	×			×		×			×	−	o	×		−	−	−			×				×	−	×		×	×	×			×	×	×	−	o	×	−	−			o	o	o	o								
Sodium Hyposulfate	−		×	×			×		×	o	o		×						×	×				o						×					×																					×																										
Sodium Nitrate, $NaNO_3$	×	+	×	×	×	−	×	×	×	+	×	o	+	+	×	o	+	o	×	o	×		−	−	×				×	×	×	×	×		×			×	−	×	×	×	×	×	×	×		×				×	×	×		×	×	×			×			×	×	×	×	×			×	×	o	×								
Sodium Peroxide, Na_2O_2	−		×	×	+		×		×	−	−		×	+	+	+	×	+	×	×			o	o						−					×																	×				×	×																×									
Sodium Phosphate, (Tri) Na_3PO_4	×		×	×	+		×		×	−	o		+	+		×	×	×	×	×			×	×			×			−	−		×	×	×			×	×	−	×			×			×		×			×	×			×	×				−			−	−		×	−			×	×	×	×								
Sodium Silicate, Na_2SiO_3	×		×	×	+	×	×		×	−	−		+	×	+	×	×	×	×	×			×							−					×	×		×	×	×	×		×	×								×				×	×				×			×			×	×					×	×								
Sodium Sulfate, Na_2SO_4	×	×	−	−	×	×	×	×	×	×	×	−	+	×	×	×	×	×	×	×	−		−	×			×		×	×			×		×			×	×	×			×	×							×	×	×	×		×	×	×							×	×					×	×	×	×	×							
Sodium Sulfide, Na_2S	+	×	−	×	×	×	×	×	×	o	o	−	+	+	+	×	×	×	×	×	×		−	o			×		×	−	−		×	×	×			×	−	×	×		×	×							×	×	×	×		×	×				×				×	×				−	×		×	+**	−			−	o	o	−	−
Sodium Sulfite, Na_2SO_3	+	×	−	−	−	×	×	×	o	−	−	×	−	−	−	o	×	o	×	×	×		−				×		×	×	×		×		×			×	×	o	×		×	×								×	×	×		×	×	×						−	×	×	−	−			×	×	×	×	×							
Stannic Chloride, $SnCl_4$	o		o	o	o		×	−	×	o	o	×	o	o	o	o	×	o	−	o			×				×			×					×								×	o								×	×		×	×	×	×							×								×	o	×							
Stannous Chloride, $SnCl_2$	o		o	−			×	−	×	o	o		o	o	o	×	×	×	×	×		×	×				×			×					×			×	×	−				×							×	−		×		×	×	×												×		×										
Stearic Acid $CH_3(CH_2)_{16}COOH$	−	−	×	×	×	−	×	×	×	−	−	−	×	×	×	×	×	×	×	×	×		×	×			×		×	×			×		×			−		o			×	o							×	×	×	×		×	×	×							×	×					×		×	×								
Sulfur, Molten, S	−	×	−	−	−	−	×	×	×	o	×	o	−	−	−	o	o	o	×	−	o		×	o			×	+	−	×					−		−															o	o		×			o							×	o							×									
Sulfur Chloride, (Wet), S_2Cl_2	−		o	−		×	−	−	×	o	o		−	−					×					o						×					×																				×																×									
Sulfur Dioxide (Dry), SO_2	×	×	×	×	−	×	×	×	×	×	×	×	o	o	o	o	×	o	×	−	×		×	o		×			×	×	×		×		×			−	−	o	−			×			−					×	−	−		×		×				×		×						×		−	×									
Sulfur Dioxide (Wet)	o		−	×			×		−	o		×	o	o	o	o	×	o	×				×				+		×	×	×				×			−		o			×									−		−		×		×														o	×								
Sulfur Trioxide, SO_3	×		×	×		×	×	×	−	−	×		o	o	o				×				o	o						×			×		×			×	×	o	×		×	o			o					×				×						×	×								×		×	×								
Sulfuric Acid (Fuming to 98%)	−	−	o	o		−	×	×	o	o	−	o	o	o	o	×	o	×	×	×		o	o	o			o		o	×	×	×								o		o		×	o	o	o	o	o			o		−		×	o	o			o			o			o	o			o	o	o	×	o			o	o	o	o	o
Sulfuric Acid (Hot Conc.) H_2SO_4	o		o	o			+		×	o	o	−	o	o	o	o	o	×	+	+	o	o	−				o			×								o	o	o			o													×	o	−							o						o	o	×	o				o	o	o	o	o

*Note: Duriron is as shown. Durichlor is also satisfactory on chlorides and HCl.

**Durcon 5 would be the preferred formula.